VASCULAR ACCESS KITS AND METHODS

RELATED APPLICATION

[0001] This application claims the benefit of U.S. Provisional Patent Application Ser. No. 60/675,246, filed Apr. 27, 2005, and entitled "Vascular Access Kit."

[0002] This application is a U.S. continuation-in-part application of U.S. application Ser. No. 10/449,503 entitled "Apparatus And Method To Provide Emergency Access To Bone Marrow", filed May 30, 2003 now U.S. patent Ser. No. _____, which claims the benefit of U.S. Provisional Patent Application Ser. No. 60/384,756, filed May 31, 2002.

CROSS-REFERENCE TO RELATED APPLICATIONS

[0003] The present disclosure is related to U.S. patent application Ser. No. 10/449,503 filed May 30, 2003; U.S. patent application Ser. No. 10/448,650 filed May 30, 2003; U.S. patent application Ser. No. 10/449,476 filed May 30, 2003; and U.S. patent application Ser. No. 10/987,051 filed Nov. 12, 2004.

TECHNICAL FIELD

[0004] The present disclosure is related to apparatus and methods to obtain vascular access and more particularly to a kit, apparatus contained in the kit and associated methods which may be used to provide access to bone, bone marrow and other portions of a patient's vascular system using the apparatus.

BACKGROUND

[0005] Every year, millions of patients are treated for life threatening emergencies in the United States. Such emergencies include shock, trauma, cardiac arrest, drug overdoses, diabetic ketoacidosis, arrhythmias, burns, and status epilepticus just to name a few. For example, according to the American Heart Association, more than 1,500,000 patients suffer from heart attacks (myocardial infarctions) every year, with over 500,000 of them dying from its devastating complications. In addition, many wounded soldiers die unnecessarily because intravenous (IV) access cannot be achieved in a timely manner. Many soldiers die within an hour of injury, usually from severe bleeding and/or shock.

[0006] An essential element for treating all such emergencies may be the rapid establishment of an IV line in order to administer drugs and fluids directly into the circulatory system. Whether in the ambulance by paramedics, in the emergency room by emergency specialists or on the battlefield by an Army medic, a common goal is to start an IV as soon as possible to administer life saving drugs and fluids. To a large degree, the ability to successfully treat such critical emergencies may be dependent on the skill and luck of the operator in accomplishing vascular access. While it may be relatively easy to start an IV on some patients, doctors, nurses and paramedics often experience difficulty establishing IV access in approximately twenty (20%) percent of patients. The success rate on the battlefield is often much lower where Army medics may only be about twenty-nine (29%) percent successful in starting an IV line during emergency conditions in the field. These patients are probed repeatedly with sharp needles in an attempt to solve this problem and may require an invasive procedure to finally establish an intravenous route.

[0007] In the case of patients with chronic disease or the elderly, the availability of easily accessible veins may be depleted. Other patients may have no available IV sites due to anatomical scarcity of peripheral veins, obesity, extreme dehydration or previous IV drug use. For these patients, finding a suitable site for administering life saving drugs may become a difficult and frustrating task. It is generally well known that patients with life threatening emergencies have died because access to the patient's vascular system with life saving IV therapy was delayed or simply not possible.

[0008] An accepted alternative route to give IV medications and fluids is through bone marrow by providing intraosseous (IO) access. Drugs and other fluids may enter a patient's vascular system just as rapidly via the intraosseous route as when given intravenously. Bone and associated bone marrow may be considered a large, non-collapsible vein. The IO route has been used for alternative emergency access in pediatric patients, whose bones are soft enough to permit manual insertion of IO needles.

SUMMARY

[0009] The present disclosure relates to kits, apparatus contained in such kits and associated procedures to obtain access to a patient's vascular system. For some embodiments such kits may include intravenous (IV) access devices and intraosseous (IO) access devices. Such kits may be used in both emergency situations or more routine procedures associated with treating chronic conditions. The present disclosure may provide apparatus and methods to establish vascular access during treatment of a patient at a wide variety of locations and facilities including, but not limited to, accident sites, emergency rooms, battlefields, emergency medical services (EMS) facilities, oncology treatment centers, chronic disease treatment facilities and veterinary applications.

[0010] Technical benefits of some embodiments may include providing portable kits with devices and components for rapid penetration of bone and bone marrow to provide access to a patient's vascular system.

[0011] Technical benefits of some embodiments may include devices and components for rapid penetration of bone and associated bone marrow. Such devices and components may be placed in a kit for use in accessing a patient's vascular system.

[0012] Technical benefits of some embodiments may include obtaining fast, inexpensive access to a patient's vascular system with minimal risk. Apparatus and methods incorporating teachings of the present disclosure may be used to provide IO and IV access so that drugs and/or fluids can be injected into associated bone marrow.

BRIEF DESCRIPTION OF THE DRAWINGS

[0013] A more complete and thorough understanding of various embodiments and advantages thereof may be acquired by referring to the following description taken in conjunction with the accompanying drawings, in which like reference numbers indicate like features, and wherein: